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[redacted]

8 NOVEMBER 1977

[redacted]

SOVIET RORSAT SUFFERS A MAJOR MALFUNCTION

Preliminary data indicate that Cosmos 954, a radar ocean reconnaissance satellite (RORSAT), suffered a major malfunction that may have occurred [redacted] (b)(3) (b)(1)

We believe these satellites carry a failsafe mechanism to ensure that the spacecraft can boost its nuclear power supply into a higher orbit, although we do not know what criteria are necessary to activate this failsafe device. Unless this maneuver occurs, the radioactive material aboard Cosmos 954 may reenter the atmosphere as early as December of this year.

[redacted] (b)(1) (b)(3)

[redacted]

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At the end of a RORSAT's collection mission, a portion of the satellite moves to a higher orbit (about 500 nm), while the remainder stays in the low orbit and soon decays. We believe these spacecraft are powered by a nuclear device and that it is this device that is put into a higher orbit. [redacted] (b)(1) (b)(3)

In effect, the RORSAT has a failsafe device. If the malfunction on Cosmos 954 includes the failsafe mechanism, then the satellite will reenter the atmosphere.

We would expect a RORSAT to reenter the atmosphere, [redacted] in as little as 30 to 60 days. [redacted] (b)(3) (b)(1)

Cosmos 954 was launched on 18 September, two days after another RORSAT, Cosmos 952. The two satellites were placed into the same orbital plane [redacted] (b)(1) (b)(3)

Pairing the satellites in this manner allowed the second satellite to follow up on returns from the first vehicle (at higher latitudes). This would provide limited information on the speed and direction of target ships. [redacted] (b)(3) (b)(1)

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~~Top Secret~~ (b)(3)

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(b)(3)
(b)(1)

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